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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/620,162	07/20/2000	Thomas H. Baum	249-Div.	2598

7590 10/22/2002

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EXAMINER

MARKHAM, WESLEY D

ART UNIT	PAPER NUMBER
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1762

12

DATE MAILED: 10/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/620,162

Applicant(s)

BAUM ET AL.

Examiner

Wesley D Markham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 July 2002 and 12 August 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5,7-17,19,21,27 and 28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,7-17,19,21,27 and 28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 July 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection (i.e., as paper #11 on 8/12/2002). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/10/2002 as paper #9 (i.e., amendment D) has been entered.

Response to Amendment

2. Acknowledgment is made of applicant's amendment D, filed as paper #9 on 7/10/2002, in which Claims 6, 18, 20, and 22 were canceled, Claims 14 and 27 were amended, and Claim 28 was added. Claims 1 – 5, 7 – 17, 19, 21, 27, and 28 are currently pending in U.S. Application Serial No. 09/620,162, and an Office Action on the merits follows.

Claim Objections

3. The objections to Claims 6, 14, 18, 20, 22, and 27, set forth in paragraphs 2 – 4 of the final Office Action (paper #8, mailed on 5/9/2002), are withdrawn in light of applicant's amendment D.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. The rejection of Claim 27 under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention, set forth in paragraph 7 of paper #8, is withdrawn in light of applicant's amendment D. Specifically, amended Claim 27 now recites that the manganate material has a Curie temperature that is "between 273 K and 334 K" instead of simply "above 273 K". The applicant's specification as originally filed has support for this limitation.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. The rejection of Claim 27 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, set forth in paragraph 10 of paper #8, is withdrawn in light of applicant's amendment D.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 1 – 4, 7 – 17, 19, 21, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Li et al. (USPN 5,487,356) and Munakata et al. (USPN 6,060,420) for the reasons set forth in paragraphs 14 – 19 of paper #8 and below.

11. Claim 27, as amended, requires that the manganate material has a Curie temperature that is between 273 K and 334 K. The combination of Li et al. and Munakata et al. is silent as to the Curie temperature of the manganate material. However, the combination of Li et al. and Munakata et al. teaches all the process

steps / limitations of the applicant's claims. In addition, Munakata et al. teach / render obvious the applicant's claimed A-site deficient manganate materials. Since the Curie temperature of a given material is simply a property inherent to the material, and the combination of Li et al. and Munakata et al. teaches all the process steps / limitations of the applicant's claims (including the A-site deficient manganate materials claimed by the applicant), the manganate materials of the combination of Li et al. and Munakata et al. would have inherently possessed the applicant's claimed Curie temperature values unless essential process steps / limitations are missing from the applicant's claims.

12. New Claim 28 additionally requires that the manganate material be annealed in oxygen. The combination of Li et al. and Munakata et al. also teaches this limitation. Specifically, it would have been obvious to one of ordinary skill in the art to form the A-site deficient materials of Munakata et al. using the CVD process of Li et al. for the reasons set forth in paragraph 15 of paper #8. Further, Li et al. teach that the properties of the materials grown by their method can be improved by post-growth annealing in an oxidizing atmosphere such as oxygen (Col.8, lines 4 – 8 and 58 – 61). Therefore, it would have been obvious to one of ordinary skill in the art to anneal the A-site deficient manganate material(s) of Munakata et al. (i.e., that have been formed by the CVD process of Li et al.) in oxygen as claimed by the applicant with the reasonable expectation of successfully improving the properties of the material as taught by Li et al.

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13. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Li et al. (USPN 5,487,356) and Munakata et al. (USPN 6,060,420), and in further view of Vaarstra (USPN 6,010,969) and Biagini et al. (USPN 5,659,101) as set forth above in paragraph 10 and in paragraphs 20 – 21 of paper #8.

Response to Arguments

14. Applicant's arguments filed on 7/10/2002 have been fully considered but they are not persuasive.
15. First, the applicant makes a number of arguments against Li et al. (USPN 5,487,356) alone, such as stating that Li et al. does not suggest or understand that making a material A-site deficient raises the Curie temperature of the material to at or above room temperature, and stating that Li et al. is directed to making stoichiometrically regular films. In response to applicant's arguments against Li et al. individually, one cannot show non-obviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Further, the examiner notes that the claims of the instant application do not require the manganate material to have a Curie temperature at or above room temperature. Dependent Claim 27 is the only claim that refers to a Curie temperature, and the Curie temperature is only required to be above 273 K (i.e., 0° C).

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16. Second, the applicant argues that, because Li et al. teaches making stoichiometrically regular films, Li et al. teaches away from the applicant's claimed invention. In response, Li et al. does not teach away from the applicant's claimed invention – Li et al. simply teaches a different way. This is not the same as a “teaching away”.
17. Third, the applicant argues that there is no motivation in the art to move in the direction of the applicant's claimed process for making magnetoresistive materials having a Curie temperature that is at or above room temperature. In response, the examiner again notes that the claims of the instant application do not require the manganate material to have a Curie temperature at or above room temperature.
18. Fourth, the applicant argues that only through inventive insight could the inventors of the instant invention discover that (1) reducing the concentration of an A-site component in a manganate material increases the RT_{max} , (2) the ratio of M/La is critical to obtaining RT_{max} , (3) the variance in (La+M);Mn ratio has a greater influence on T_c than M/La, and (4) the method conditions under which to obtain 1 – 3. In response, it is noted that the aforementioned features are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).
19. Fifth, the applicant argues that Munakata et al. teaches away from the applicant's claimed component stoichiometry. In response, the examiner strongly disagrees. Munakata et al. explicitly teaches an A-site deficiency of up to 0.2 (Abstract),

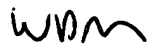
corresponding to an "(x+y)" value of 0.8. This is within the applicant's claimed range of (x+y) values of 0.5 to 0.9. The examiner does note that Munakata et al. does not explicitly teach (x+y) values of less than 0.8, but the claims of the instant application are open to (x+y) values of up to 0.9, a range encompassed by the teaching of Munakata et al.


20. Sixth, the applicant argues that, absent hindsight reasoning, there is no motivation to combine Li et al. with Munakata et al. In response, the motivation to combine Munakata et al. with Li et al. is clear and explicit in the references. Briefly, Munakata et al. is drawn to making A-site deficient manganate films having a specific stoichiometry (Abstract and Col.3). Li et al. teaches that manganate films can be successfully deposited by liquid source delivery CVD (Abstract). Further and importantly, Li et al. also teaches that benefits of this CVD method include (1) good control of key variables such as film thickness and film stoichiometry, (2) coating of a wide variety of substrate geometries, and (3) the ability to be readily scaled up to production runs (Col.2, lines 38 – 65). This teaching provides a clear motivation to combine Li et al. with Munakata et al. (i.e., to form the A-site deficient materials of Munakata et al. utilizing the method of Li et al.). Please note that the fact that applicant has recognized another advantage (i.e., the magnetoresistive benefits of having an A-site deficient stoichiometry in a manganate film) which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Conclusion

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wesley D Markham whose telephone number is (703) 308-7557. The examiner can normally be reached on Monday - Friday, 8:00 AM to 4:30 PM.
22. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on (703) 308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.
23. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Wesley D Markham
Examiner
Art Unit 1762


WDM
October 17, 2002


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